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**From:** Reddy - CDPHE, Patrick [patrick.reddy@state.co.us]  
**Sent:** 5/15/2015 1:50:31 PM  
**To:** Tonnesen, Gail [Tonnesen.Gail@epa.gov]  
**CC:** OTT, LESLEY E. (GSFC-6101) [lesley.e.ott@nasa.gov]; Duncan, Bryan N. (GSFC-6140) [bryan.n.duncan@nasa.gov]; Patrick.Reddy@dphe.state.co.us; brad.pierce@noaa.gov  
**Subject:** Re: GMAO modeling

Thanks Lesley and Bryan for sending the plots. As I recall, last year your model did a great job of capturing the effects of intrusions on surface O3 in the West. Could you show some of those results and also explain the tracer products? Thanks, have a great weekend.

Pat

On Fri, May 15, 2015 at 7:22 AM, Tonnesen, Gail <Tonnesen.Gail@epa.gov> wrote:

Hi Lesley,

Thanks, and yes, if you have some slides that would be great. I'll send out an email on Monday with the invite and conf line info for the call.

Thanks,

Gail

303-312-6113

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**From:** OTT, LESLEY E. (GSFC-6101) [mailto:[lesley.e.ott@nasa.gov](mailto:lesley.e.ott@nasa.gov)]  
**Sent:** Thursday, May 14, 2015 8:27 AM  
**To:** Tonnesen, Gail; Duncan, Bryan N. (GSFC-6140)  
**Cc:** [Patrick.Reddy@dphe.state.co.us](mailto:Patrick.Reddy@dphe.state.co.us); [brad.pierce@noaa.gov](mailto:brad.pierce@noaa.gov)  
**Subject:** RE: GMAO modeling

Hi Gail,

I'm available next Tuesday and would be happy to join. Would it be helpful for us to prepare a few slides?

Thanks,  
Lesley

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**From:** Tonnesen, Gail [[Tonnesen.Gail@epa.gov](mailto:Tonnesen.Gail@epa.gov)]  
**Sent:** Thursday, May 14, 2015 9:21 AM  
**To:** Duncan, Bryan N. (GSFC-6140); OTT, LESLEY E. (GSFC-6101)  
**Cc:** [Patrick.Reddy@dphe.state.co.us](mailto:Patrick.Reddy@dphe.state.co.us); [brad.pierce@noaa.gov](mailto:brad.pierce@noaa.gov)  
**Subject:** RE: GMAO modeling

Hi Bryan, Lesley,

Are you available Tuesday next week to talk with the Stratospheric Intrusion workgroup about the GMAO modeling? If Tuesday does not work we can set another date – we meet the 3<sup>rd</sup> Tuesday of each month at 10 am MDT.

Thanks,

Gail

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Gail Tonnesen, Ph.D.

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**From:** Duncan, Bryan N. (GSFC-6140) [<mailto:bryan.n.duncan@nasa.gov>]  
**Sent:** Wednesday, May 13, 2015 12:24 PM  
**To:** Reddy - CDPHE, Patrick  
**Cc:** Pierce', 'GORDON; Tonnesen, Gail; OTT, LESLEY E. (GSFC-6101); THOMPSON, ANNE M. (GSFC-6100)  
**Subject:** RE: GMAO modeling

Hi Patrick,

As requested, I've attached a plot from Lesley of the May 25, 2014 event. This plot shows one of our 'pulse' tracers at the surface throughout that day. The numbers indicate the percentage of air that was in the stratosphere during the previous 2 weeks. This really develops throughout the day and by May 26, the influence of stratospheric air is quite widespread across the Western US and Colorado. Please let us know what other types of plots that you would like.

Lesley is working on the April 13-19, 2015 event now, including the CO tracers. Stay tuned.

Bryan

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Bryan N. Duncan

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**From:** Reddy - CDPHE, Patrick [<mailto:patrick.reddy@state.co.us>]

**Sent:** Tuesday, April 21, 2015 12:52 PM

**To:** Duncan, Bryan N. (GSFC-6140)

**Cc:** Pierce', 'GORDON; Tonnesen, Gail

**Subject:** GMAO modeling

Hi Bryan,

During today's intrusion work group call, Brad Pierce said it would also be useful if Lesley were able to generate plots of CO and/or biomass burning tracers so that we could distinguish true intrusion events from those that may be intermixed with Asian anthropogenic or fire

emissions. It's also looking like there is a lot of interest in the week of April 13-19, 2015, during which there were intrusion events and possible Asian transport events in western states.

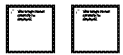
Cheers,

Pat

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